<u>Remarks</u>

Below, the applicant's comments are preceded by related remarks of the examiner set forth in small bold font.

3. Claims 6, 25, and 27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The Office respectfully requests the Applicant to point out in the specification where it is discussed that regulating the resource such that the total resource usage does not exceed the preset amount per unit of time.

An example of "regulating usage of the resource based on said decreasing of said value so that the total amount of further usage of the resource does not exceed the preset amount per unit of time," as recited in amended claim 27, is provided in the following passage of the specification (in this passage, the value "c" is an example of the preset amount per unit of time, and the Fill Level is an example of the usage of the resource):

"In the preferred method, each leaky bucket has a "Fill Level". A Fill Level may be defined as a current usage of a resource controlled by the leaky bucket. When a programmer uses the bucket, a numerical value representing the desired amount of resource usage is added to the Fill Level. After a pre-defined period, for example, t microseconds, a value "c" is subtracted from the Fill Level. The value c may be defined as an estimate of how much of a resource is available (i.e., not being used by another process) every t microseconds.

The bucket size "m" is the maximum allowed Fill Level in the bucket. The difference between the maximum Fill Level and a current Fill Level is called the "credit".

...

UseLeakyBucket increments the Fill Level on a specified leaky bucket by a specified amount. This route returns TRUE if the Fill Level can be incremented without the bucket overflowing. This means that a station 60 can access the requested resource. If the available credit is less than AMOUNT, the requested usage of a resource by a station 60, or if another station 60 is waiting to use the requested resource, the Fill Level is not incremented, and the function returns FALSE. This means that a requesting station 60 is generally unable to use the resource until some later time, when enough credit is available to handle the request from the station 60." (line 21, page 7 to line 7, page 8 and lines 11 to 18 of page 9)

In the example above, the total amount of further usage of the resource does not exceed an amount represented by the value "c" per t microseconds.

> 4.   Furthermore no mention of any priority levels to either a process or a resource was discussed in the specification. If this is an oversight, the Applicant is requested to direct the Examiner as to the appropriate passages of the specification which discuss setting priorities to both resources and processes and using them to determining allocation hierarchy.

One example of "determining a priority of the resource; and allocating the resource based on the priority of the resource," as recited in claim 6, is given in the following passage of the specification (emphasis added):

> "The parameter maxi may be assigned to a numerical value to specify a maximum Fill Level to be used greater than the value m specified when the leaky bucket was initially created. This can be used when a station 60 requests usage of a resource that would exceed the limits c, t, m of the system. For example, if the resource is important or has a high priority level, maxi may be set to a high numerical value to override the initial maximum Fill Level m. This allows an important or critical process, such as in a nuclear reactor system, to access a resource for a greater period of time to execute the process. If the process is not important, the value of m is set to logical zero (0). Accordingly, using maxi can vary the credit available for requested resource (line 21, page 10 to line 5, page 11)."

> 6.   Claims 1, 10, 14, 17, 18, 22, 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

> 7.   The claims 1, 10, 17, 18, 22, and 24 recite the limitation,"... allowing increased usage of the resource by the at least two processes based on said decreasing". This is unclear. It is undeterminable from the claim as to how the value is decreased and the weighting between the two processes how the decreasing has occurred (i.e., is the entire decreasing based on the usage of the first process, equally between the two or more, or weighted unequally between the processes). Furthermore it is undeterminable how by decreasing the usage of the resource allows the increased usage of the resource. As it is read this would allow for decreased usage of the resource since the total resource usage is decreased. Correction is required.

The applicant has amended claim 1 to recite "indicating a value representing a total amount of current usage of the resource by at least two processes using the resource; ...

regulating usage of the resource by the at least two processes based on the indicated available amount of credit and allowing increased further usage of the resource by the at least two processes based on said decreasing of said value." The value indicates a "current usage" of the resource, and decreasing the value allows increased "further usage" of the resource.

Claim 1 recites "decreasing said value according to a predetermined function of time." The predetermined function of time can be implemented in a number of ways. For example, as recited in claim 26, the value is decreased by a preset amount per unit of time, and as recited in claim 28, the preset amount represents an estimated amount of resource that becomes available per unit of time. The decreasing of the value is not necessarily based on the usage of the resource by the two processes.

9.   Claims 1, 4, 5, 8-10, 17-18, and 21-26 rejected under 35 U. S. C.
103(a) as being unpatentable over Lowe (USPN 6,125,396).

10.   Referring to claims 1 and 26, Lowe discloses a method of
managing usage of a resource (i.e., access rates to a shared file server) in a
network system, the network system comprising:
        indicating a value representing total amount of usage of the
resource by at least two processes using the resource (it is inherent that the
system taught by Lowe maintains some form of memory that stores the
amount of resource usage in the system by the statement "based on
current usage of shared resource 428 by other clients..." col. 4, line 30; col.
7, lines 15-16);
        indicating an available amount of credit (usage reserve) for usage
of the resource by the at least two processes based on said value (e. g.
abstract; Figure 3, reference character 324; col. 5);
        decreasing said total resource usage according to a function of
time (since Lowe discloses that the process repeats in intervals, such as per
second, it inherently decreases the total resource usage based on a function
of time) (col. 5, line 55-62; col. 7, line 39 to col. 8, line 45);
        regulating usage of the resource by the at least two processes
based on the indicated available credit and allowing increased usage of the
resource by the at least two processes based on said decreasing (the
example taught by Lowe discloses that at the one second interval the
desired usage rate is 10 blocks/second, the second time interval is 7
blocks/second, third time interval is 7 blocks/second, fourth time interval is
12 blocks/second) (Figure 4; col. 5, line 55-62; col. 7, line 39 to col. 8, line
45).
        Lowe does not disclose that the total resource usage id decreased
using a preset amount per unit of time. However it is well known and
expected in the art that a leaky bucket system has the ability to have a
predetermined (i.e., constant) drain level (i.e., constant rate usage by the
clients of Lowe) and would have been obvious to one of ordinary skill in
the art to provide for decreasing the value according to a predetermined

> function of time for simplicity of programming and to provide for the
> server to exercise some authority as to the rate at which clients may
> download data, thereby enhancing overall QoS for all the clients as well as
> for a more efficient bandwidth monitoring.

The applicant concedes that it may be possible that the system taught by Lowe maintains some form of memory that stores the amount of resource usage in the system. However, Lowe does not teach or suggest "decreasing said value according to a predetermined function of time; and regulating usage of the resource by the at least two processes based on the indicated available amount of credit and allowing increased further usage of the resource by the at least two processes based on said decreasing of said value," where the value represents "a total amount of current usage of the resource."

Lowe discloses decreasing a reserve (col. 5, line 55). A reserve represents an amount that can be further provided to the processes, not a total amount of current usage of the resource. Column 7, line 39 to column 8, line 45 of Lowe discloses incrementing and decrementing the reserve. Nowhere does Lowe disclose or suggest the features of claim 1 recited above.

Claims 2-9, 22, 23, and 25-28 are patentable for at least the same reasons as claim 1.

With regard to claim 10, Lowe does not teach or suggest "decreasing said value according to a predetermined function of time; and regulating the usage of any of the plurality of the resources by any of the plurality of devices as a function of the indicated available amount of credit and allowing increased further usage of the resource by the device based on said decreasing of said value," where the value represents "a total amount of current usage of the resource by at least two devices." Thus, claim 10 is patentable over Lowe.

Claims 11-16 are patentable for at least the same reasons as claim 10.

> 16.   Claim 18, is rejected for similar reasons as stated above.
> Furthermore, Lowe discloses a network including a plurality of devices,
> comprising:
>   a plurality of resources running in the network ("governing access
> to computer resources") (col. 5, lines 1-9);
>   computer software, residing on a computer readable medium at
> each device (Lowe discloses that the client governs its own access to shared
> resource 428, col. 7, lines 20-23, therefore the client must have software
> residing on computer readable medium at each device) accessing the
> plurality of resources.
>   ...

19. Claims 17, 21, and 24 are rejected for similar reasons as stated above. Furthermore Lowe discloses the system comprises computer software, residing on a computer-readable medium at a device connected to a network (col. 3, lines 10-25).

Lowe does not teach or suggest "regulating usage of the resource by the device as a function of the indicated available amount of credit and allowing increased further usage of the resource by the device based on said decreasing of said value," as recited in amended claim 18, where the value represents "a total amount of current usage of a resource by at least two devices."
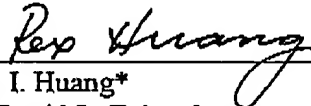
Claims 19-21 are patentable for at least the same reasons as claim 18.

Claims 17 and 24 are patentable for at least the same reasons as claim 18.

Please apply any charges or credits to deposit account 06-1050, referencing attorney docket 10559-233001.

Respectfully submitted,

Date: 12/24/2003

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* See attached document certifying that Rex Huang has limited recognition to practice before the U.S. Patent and Trademark Office under 37 CFR § 10.9(b).
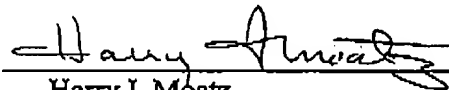
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Expires: May 16, 2004

Harry I. Moatz
Director of Enrollment and Discipline